# Sweeping Cheatsheet

## Use this algorithm when:

- This is the hardest part
- The brute force does useless work
- There is a logical order to look at the input in
- When you look at the input in that order, every value only depends on PREVIOUS values

## Steps to using the algorithm:

Thinking about the problem:

1) Find a logical order to sort the input in and sort the input
    a. If you have ranges, split each range into an open item and a close item
2) Figure out how you want to store information about the previous items
    a. Ask yourself for any given index, what information do I need about the previous values to update the answer
    b. Common examples: integer, set, BIT, monotonic queue
3) Figure out how to do steps 6a and 6b

Implementation:

4) Sort the input (if needed)
5) Initialize variables for the answer and the stored information
6) Loop through the input in order. At every index:
    a. Use the current index and the stored information to update your answer
    b. Use the current index to update the stored information

## How to calculate the runtime:

O( (If you sort first: N log N + ) N * (runtime of step 6a + runtime of step 6b) )